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ABSTRACT

A survey of business and industrial training team supervisors and members was undertaken in order to identify the most important entry-level competencies required of instructional development specialists in a variety of business and industrial settings. The study sample of 300 was randomly selected from the approximately 2,850 members of the Senior Trainers interest group of the American Society for Training and Development (ASTD). Participants were requested to rank a list of instructional development competencies. Survey data were analyzed by tabulating the mean for the overall importance of each competency so as to rank order the entire list. The results indicated that: (1) certain competencies were consistently rated as more important than other competencies; (2) interpersonal skills were the highest-ranked competencies; (3) instructional team members differed from instructional team supervisors in their ranking of competencies; (4) certain competencies were consistently lowest rated; and (5) the type and size of organization and the function of an organization's development unit were not important variables in determining desired competencies. A set of 13 recommendations based on the study are presented. Two ranked lists of competencies and a list of participants are provided as well as a 29-item bibliography. (Author/JL)

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ENTRY LEVEL COMPETENCIES FOR INSTRUCTIONAL DEVELOPERS

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President, Dynamic Directions

Association for Educational Communications and Technology
Annual Convention
Tuesday, May 4, 1982

Dallas, Texas

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Demands for accountability and relevance in education and training have led to increased emphasis on the competence of practitioners in a number of professions. Competency-based instruction, with its goal of mastery of the material by all qualified learners, in spite of their differences in entry skills and abilities, has been one result of this emphasis. Another result is the use in many professions of competencies to measure the professional effectiveness of persons within the field, and as such, to judge whether the standards of a profession are being upheld. As in other professions, persons in instructional development have been concerned with identifying the most appropriate competencies for practitioners in that field.

The primary purpose of the study on which this paper is based was to identify the most important entry level instructional development (ID) competencies required in a variety of business and industry settings, as perceived by those responsible for hiring and/or supervising the instructional developers. Recognizing that each organization would have unique characteristics and requirements, it was the objective of this study to identify common entry level competencies that were considered essential for team members as well as for persons in management or supervisory positions in an instructional development, training, or human resource development unit. The significance of this study is that it will assist academic institutions in preparing students who are interested in going into business or industrial settings. The study should also be of value to the businesses and industries as a selection guide, as they will have a better idea of what skills to expect from ID graduates.

Null research hypotheses were formulated to investigate which

competencies (the dependent variables in the study) were seen as the most important for two entry level positions (team member and supervisor/-manager) on development teams, and to investigate whether type of organization, principal function of the development unit, and size of the development unit (the independent variables) were important variables in the competencies desired for either of these two entry level positions.

The four major limitations of the study were: 1) that it was a survey, and as such depended on subjective perceptions of respondents; 2) the sample was drawn from members of only one national organization (ASTD) and therefore looked at a selected group in business and industry; 3) information was requested from those who hire and/or supervise rather than from those who actually perform the work; and 4) the researcher chose not to study the areas of educational, health care, military or governmental agencies, which also employ instructional developers.

The review of recent literature assisted in forming a basis and impetus for the study. The concepts of competence and competency-based education were explored and discussed, as were the movement of instructional developers into business and industry, the emergence of human resource development as an important professional activity, and the importance of understanding basic considerations about the adult as a learner. Proceedings of various meetings and reports of previous studies were examined and utilized in formulating the research questions and hypotheses and to generate the list of competencies used.

A sample size of 300 was randomly chosen from the approximately 2,850 members of the Senior Trainers interest group of the American Society for Training and Development. Each participant was asked demographic data regarding the name of the organization of the respondent, the principal

product/service offered, the type of organization (indicated by a check mark next to one of the choices of: merchandizing, service organization, industrial manufacturing or scientific manufacturing), a rank ordering of three possible principal functions of the instructional development or training development unit (training, education, and development), the number of employees in the unit, the number of developers supervised by the respondent, and the primary responsibility of the respondent in the training development function. They were then asked to rate the importance of the seventy competencies according to a five point Likert type scale (from "essential" to "of no importance"). Through the initial mailing and three follow-ups, 162 or 54 percent of the questionnaires were returned. Of the 162 returns, 127 or 43 percent, were useable for the analysis of data in the study. (See Appendix for those participants willing to be credited for responding. List is arranged alphabetically by organization, and contains the name of the organization and the name of the person who responded.)

As to type of organization, sixteen (or 12.6 percent) of the respondents represented merchandizing, fifty-nine (or 46.5 percent) represented service organizations, twenty-five (19.6 percent) represented industrial manufacturing, and twenty-seven (21.3 percent) represented scientific manufacturing.

In terms of primary function of the development unit, 87 percent of the respondents ranked training as the primary function of their unit. Education was rated as the primary function by 7.5 percent, with 4.7 percent reporting development as their primary function.

The size of the development unit ranged from one to ten thousand employees, with the median being 6.5 employees. The number of developers

supervised by the respondents varied from one to forty, with the average being 5.7 persons; the median was three persons.

The data was analyzed by tabulating the mean for the overall importance of each competency, so as to rank-order the entire list. A difference was found in the rank order of the competencies. Repeated measures analyses of variance revealed statistical significance for the higher ranked competencies (numbers one through three for team members, and one through four for supervisors/managers) as well as for a few (58th for team members; 63rd, 64th and 67th for supervisors/managers) of the competencies toward the bottom of the lists. However, it would appear that for a majority of the competencies below those ranked the highest three or four, there was no significant difference in importance as judged by the respondents.

An intraclass correlation analysis indicated that the raters were able to discriminate well between what they were rating (between the competencies), as well as how well they agreed on any particular item (on an individual competency).

Multivariate analysis of covariance, with size as the covariate and a priori planned comparisons for the main effects of type of organization, primary function of the development unit and size of the development unit, revealed no statistical significance, except in terms of the working with equipment in the scientific manufacturing group.

Conclusions

The following conclusions were drawn from studying the data collected in the study:

Conclusion 1: Certain competencies were rated as more important than the other competencies.

Although the means computed for the various competencies were all quite close to each other and thus did not differentiate greatly between the competencies, it was important to note that at least the first (top) three competencies for team members, and the top four for supervisors/managers did show statistical significance. Thus, these three and four competencies, respectively, were the more important ones as viewed by the respondents. There was then a large "middle" group of competencies, with statistical significance not found again until towards the bottom of the list (fifty-eighth competency for team members; sixty-third for supervisors/managers.) Thus, these latter competencies can be considered as the least important competencies, as viewed by the respondents.

Conclusion 2: The highest ranked competencies for both groups dealt with interpersonal communication skills.

The highest ranked competencies dealt with interpersonal communication type skills (listening effectively, attitude formation, adapting to differing situations, establishing communication among staff members, and establishing credibility with the group), key skills to possess for almost any occupation. These results were especially similar to those reported by Deden-Parker (1981) in her study, and also somewhat similar to the Pinto/Walker study (1978) results.

Conclusion 3: There was a difference in the rating of the various competencies for team members as compared to the ratings for supervisors/managers.

Although interpersonal skills rated high on both lists, the other competencies did vary according to whether they were ratings for team

members or for supervisors/managers. The other higher ranked competencies for team members dealt with applying adult learning concepts, using equipment effectively, developing objectives, conducting group presentations, identifying appropriate presentation strategies, using evaluation data for program revision, identifying audience characteristics, and describing prerequisite skills; whereas, the other higher ranked competencies for supervisors/managers dealt with an awareness of corporate goals, communicating with other sections of the organization, preparing long and short term goals, administering budgets, evaluating the effectiveness of hired consultants, determining cost benefits, and establishing program priorities. That developmental skills are emphasized more for team members and administrative skills more for supervisors/managers also is supported by the ratings for the competencies at the bottom of the lists for each group. The less important competencies for team members dealt with preparing long and short term goals, locating outside consultants, designing research studies, mediating differences among staff, producing still photographs and multi-image displays, coordinating activities of the development unit, acquiring and managing facilities and equipment, supervising hired outside consultants, producing programs for computers, administering budgets, and establishing staffing patterns. The less important competencies for supervisor/managers had to do with preparing production specifications; preparing specifications for organizing the physical environment; designing research studies; producing simulations, role plays, and group activities; possessing subject matter expertise; and producing pamphlets and brochures, video tapes, slide-tapes, audio tapes, multi-image displays, photographs, and programs for computers. (It is interesting to note, however, that designing research studies and

producing still photographs, multi-image displays, and programs for computers are all low on both lists.)

Conclusion 4: Certain competencies appeared among the lowest ranked competencies for each group.

Just as there were certain competencies that ranked very highly at the top of each list, there were certain competencies that fell towards the bottom of each list. These competencies dealt with designing research studies and producing still photographs, multi-image displays, and programs for computers. Evidently these skills were not viewed by the respondents as being particularly important for either team members or supervisors/managers.

Conclusion 5: In this study, type of organization, function of the development unit, and size of the development unit were not important variables in determining the desired competencies, except with regard to equipment in scientific manufacturing organizations.

Statistical analyses supported the suspicions that the competencies desired for team members and supervisors/managers were not affected by type of organization, function of the development unit, or size of the development unit, with the possible exception of scientific manufacturing industries. Further study could determine whether knowledge of scientific equipment is important and necessary in those industries; otherwise, the competencies are not significantly different across the types of organizations, or affected by function or size of the development unit. Similar conclusions across occupational lines were drawn by Streit (1979) in his study.

The congruence of the above findings with those reported by the various other studies done over several years, suggests that the present

findings have validity and generalizability over different sites.

Recommendations

Keeping in mind the limitations of the study: 1) that it was a survey, and as such depended on subjective perceptions of respondents; 2) the sample was drawn from members of only one national organization (ASTD) and therefore looked at a selected group in business and industry; 3) information was requested from those who hire and/or supervise rather than from those who actually perform the work; and 4) the researcher chose not to study the areas of educational, health care, military or governmental agencies, which also employ instructional developers, the researcher made the following recommendations regarding the implications of the study:

(1) That this list of seventy competencies be used by academic preparation programs in planning curricula and advising and guiding students. This recommendation is based on the following reasons:

(a) This list seems to be fairly comprehensive and close to exhaustive, especially since few respondents added competencies to the list. (And examination of those that were added shows that in several cases the addition was basically a rewording of either a previously stated competency or of a competency that appeared later in the questionnaire. Several others were very situation-specific items that were added.)

(b) The competencies used in this study were carefully selected based on the previous work of others in past studies or committee work. Thus, the competencies should represent the most important ones.

(c) That the competencies are for the most part all considered to be important ones is evidenced by the high ratings given to most of the competencies. (Approximately 91% of the team member competencies had a mean of 2.5 or above, and over 94% of the supervisor/manager competencies had a mean of 2.5 or above.)

(d) The results of the study are consistent with results reported in previous studies.

(2) That academic preparation programs place a strong emphasis on the development of interpersonal communication skills, management skills, and the concepts of adult learning. Since competencies in these areas ranked so high on the list, not only in this but in previous studies, emphasis should be placed on these skills as well as technical instructional development skills.

(3) That academic preparation programs and business and industry personnel spend some time in determining how the various competencies will be measured. If these competencies will be used as requirements in an academic program or as a screening device in hiring by business or industry, appropriate and consistent ways for measuring such competencies will have to be established. Consideration should be given to the development of instruments that have some validity in measuring these competencies.

(4) That although computer programming skills ranked very low on both lists of competencies, consideration should be given as to whether these are important skills for the future. The low ranking given to this competency (68th out of 70 for team members, and 70th out of 70 for

supervisors/managers) in this study, and the fact that they were also at the bottom of the list in the Deden-Parker and Pinto/Walker studies should be considered from two standpoints: 1) that respondents may have been reflecting the status quo, rather than considering potentially useful or necessary skills in the future, and 2) that the competency statements may not have been clear enough to differentiate between actual programming skills (tending more towards computer science skills) and using knowledge about computers to develop computer-assisted, -aided or -managed training programs. The possibility of acquiring knowledge about computers, in anticipation of future needs, should be investigated by academic preparation programs.

(5) That it does not appear to be of paramount importance for instructional developers to possess subject matter expertise in the content area to be developed. Possessing subject matter expertise in the content area to be developed ranked fairly low (39th out of 70 for team members, 63rd out of 70 for supervisors/managers) in this study. Thus, it would appear that graduates from instructional development programs should be able to move into any one of the types of organizations and development units without various specialized background training. The one possible exception might relate to the scientific equipment discussed in Conclusion Five.

(6) Examine areas of competencies instead of individual ones. The present study investigated seventy competencies and how they ranked one against another. A future study could take the seven basic areas under which the competencies were grouped and see how they rank in importance (the sets rather than individual competencies.) This would possibly yield results on the kinds of skills that should be learned rather than specific

skills. (Domains of skills, with each domain related to another domain.)

(7) Contrast one-person development units with larger units. Since "one-person departments" were eliminated from this study, it would be interesting to contrast them and the skills required to units with more employees. Whether or not the larger departments tend towards specialization of activities could be investigated as well.

(8) Study replies from developers rather than from managers. Information in this study was requested from those who hire and/or supervise rather than from those who actually perform the work. Thus, the competencies listed by supervisors could be those viewed as ideal, or as assumed to be used, while they in fact may not be the ones used by practitioners. A future study could investigate whether responses from practitioners correspond to those given by the supervisors.

(9) Use a different technique for generating the competencies to be studied. In order to further validate the competencies in this and previous studies, it is recommended that a technique such as the critical incident technique be used. This technique, in which respondents describe effective and ineffective behaviors that have been observed as part of actual practice within a specified role, could be used to determine whether the same essential competencies are generated as in a survey where the responses essentially are limited to the answer choices printed on a questionnaire.

(10) Replicate the study with other types of organizations. For someone interested more in educational, health care, military or governmental agencies, this study could be replicated to determine whether these agencies require different competencies, and whether type of organization, function of the development unit, or size of the development unit were

important variables in those organizations.

(11) Study whether competency requirements are different for masters and doctoral level graduates. A possible study that should be of interest to academic preparation programs would be to investigate whether the competencies necessary for masters level graduates vary from those required for doctoral graduates.

(12) Study the amount of formal training needed in instructional development principles and techniques. Another recommendation for further study would be to determine whether formal training in instructional development principles and techniques really is necessary to work in business and industry in a development unit. Such a study could also study the amount of formal training possessed by persons already working in these positions.

(13) Study specific industries, especially scientific manufacturing. It is suggested that a more in-depth study be made of the manufacturing industries, especially scientific manufacturing, to determine whether they in fact do have unique requirements regarding equipment used.

APPENDIX

PARTICIPANTS WILLING TO BE CREDITED FOR RESPONDING

Name of Organization:

Advanced Systems, Inc.
 Advanced Technology Laboratories
 AM Multigraphics
 Amdahl Corporation
 American Express
 American Manufacturing Company
 of Texas
 American Savings Bank
 Arby's, Inc.
 Arthur Andersen and Company
 Audio Visual Results
 Avco Aerostructures
 Berol Corporation
 Blue Cross/Blue Shield of Mich.
 Bobby McGee's USA, Inc.
 Boehringer Ingelheim, Ltd.
 Boise Cascade Corporation
 Boston Gas Company
 Burns International Security
 Services, Inc.
 H.E. Butt Grocery Company
 Central Illinois Light Company
 CF Industries
 Citicorp Credit Services, Inc.
 Clearfield Job Corps
 Connecticut General Corporation
 Conoco, Inc.
 Creative Interchange
 Creative Universal
 Dayton's Company
 Detroit Bank Corporation
 Domino's Pizza, Inc.
 Dover Corporation/Elevator Div.
 Dow Chemical, USA
 Eastern Air Lines, Inc.
 Eastman Kodak
 Electronic Data Systems Corporation
 Electronics Association of Calif.
 Elk Corporation
 Employers Mutual Companies
 EM
 Entex, Inc.
 Equitable Savings
 Factory Mutual Engineering

Name of Person Responding:

Odin Westgaard
 Meredith L. Ward
 Kayetta Slocum
 Linda L. Thompson
 Dennis J. Stewart
 James B. Frazier
 Frederick J. Collett
 Andrew F. Arvay, III
 Maurice Coleman
 Lee Hancock
 Roxanne P. Willert
 Dayle E. Rado
 Mary Ann Motyka
 Mari A. Faistenhammer
 K.D. Wichmann
 Ann Ritter
 Susan Horwitz
 Craig A. Bussey
 Andrea Patton
 Harold W. Wissink
 William G. Eppel
 Mary Ann Allison
 John W. Jeppson
 I. Gail Howard
 H.W. Swaim
 Arthur E. Worth
 Fredrick W. Wicks
 Mitch Hammer
 Linda Conat
 Donald E. Dufek
 Joe Jenkins
 Willard B. Maxwell
 Lewis W. Lash
 Mabelle I. Parrinello
 Bob Hunsberger
 Erik R. Lindstedt
 Forrest Reynolds
 Charles Summers
 Ken Haff
 Geralyn Burke
 Lynn Hatfield
 Ellen Gold

APPENDIX - Continued

Name of Organization:

Farmland Industries
 Federal Express
 Federal Reserve Bank
 First National Bank Atlanta
 First National Bank Cincinnati
 Fluor Engineers & Constructors, Inc.
 Fox & Jacobs
 General Dynamics/Electric Boat Div.
 General Foods Corporation
 General Motors Assembly Division
 General Signal Corporation
 General Telephone Co. of Illinois
 G.F. Business Equipment/Crenlo Div.
 Gilbarco, Inc.
 Gimbels Midwest
 Grain Terminal Association
 Harley Davidson Motor Company
 Home Owners Warranty Company
 Informatics, Inc.
 ITT North Electric
 Kaiser Aluminum
 Levi Strauss International
 Los Angeles Times
 Mannesmann Tally
 Merck, Sharp & Dohme
 Merrill Lynch
 Miles Lab., Inc./Ames Div.
 3M Company
 Mohawk Parthways Girl Scout Council
 Moore Business Systems
 Morgan Guaranty Trust Company
 Morrison-Knudsen Company, Inc.
 National Bank of North America
 Naus & Newlyn, Inc.
 NCT
 New Wales Chemicals, Inc.
 NL Career Development Center/NL
 Industries
 NL Chemicals/NL Industries
 NTS Research Corporation
 Organizational Systems, Inc.
 Payco American Corporation
 Pay'n Save Corporation
 Philadelphia Life Insurance Company
 Pitney Bowes, Inc.
 Pizza Inn, Inc.
 Ponderosa System, Inc.
 PPG Industries
 Public Service Indiana

Name of Person Responding:

John Griffith
 John R. Herbek
 W.L. Thompson
 Dianne Huckins
 Robert E. Schultz
 Enrique A. Cancino
 John G. Peiser
 E.A. Sylvia, Jr.
 Lloyd K. Davis
 William Herlihy
 William R. Favro
 Alan J. Wentz
 Gene Campbell
 George A. Gates
 Gail E. Stoddard
 Irene Molitor
 James Kasper
 Delores Eldridge
 Susan Gould
 James A. Cook
 Mike Spalding
 Betty Martin-Lewis
 Jeff Fink
 Sue Vitale
 Dana Gaines
 Melissa Leifer
 J.A. Jackson
 Milton Fronsoe, Jr.
 Sally A. Bouton
 Kirk Asplin
 Nicholas J. Scalzo
 Bruce D. Zimmerman
 Jamie B. Telegadis
 Vernon L. Hamm, Jr.
 Thomas Macklin
 Richard T. Barnes, Jr.
 D.A. Kirsner
 Dougald L. MacMillan
 Richard J. Lamberski
 Victor M. Kline
 Jack Pachuta
 Gregory Diven
 W.H. Turley
 Charles H. Kinney
 Bill Curley
 William T. Pace
 Eli Vega
 Gail A. Morrison

APPENDIX - Continued

Name of Organization:

Public Service Company of N.H.
 Quality Control Circles, Inc.
 Quiktrip Corporation
 Rapidata, Inc.
 Raytheon Company
 Resorts International/Hotel Casino
 Shirlee Manufacturing Company
 Shop-n-Go Markets
 Southeast Banking Corporation
 Southern Railway System
 Stouffer Foods Corporation
 Taco Bell
 Target Stores
 Telemedia
 Tenneco Oil Company/P&M
 Tniokol/Wasatch Div.
 Thompson Recruitment Advertising
 United California Bank
 United Information Systems/United
 Telecom
 United Research Company
 Union Carbide Corporation
 Utah International, Inc.
 Wang Laboratories, Inc.
 Westinghouse Electric
 Wheat-First Securities
 Williams Brothers Engineering
 Zale Corporation/Zale Div.
 Zapata Corporation

Name of Person Responding:

Gary N. Arnold
 Roma Rieker
 Ruth Crane
 JoAnn C. Dixon
 R.A. Kaplowitz
 Gilbert H. Hatcher
 Thomas R. Koch
 Stan Helmkamp
 Pidge Diehl
 Joseph L. Gelmini
 Joseph Girolamo
 James Baron
 Jari Holland
 Michael I. Hirsch
 R.H. Woods
 William E. Jones
 Linda Green

 Lyn Barrie

 Martin C. Becker
 J.H. Victorson
 William G. Aboud
 John R. Grausam
 Robert T. Scott
 R. Wendell Williams
 Leigh Flowe
 Bob Williams
 Robert A. Jones

TABLE 8.--COMPARATIVE RANKING OF COMPETENCIES BASED ON TEAM MEMBER RANKINGS

FOR TEAM MEMBERS				FOR SUPERVISORS/MANAGERS			
Rank	Mean	Standard Deviation	Competency	Rank	Mean	Standard Deviation	
1	4.840	.410	14j-To listen effectively.	3	4.823	.495	
2	4.736	.494	14f-To adapt to differing situations.	6	4.702	.570	
3	4.680	.655	12e-To establish credibility with the group.	13	4.584	.825	
4	4.357	.843	10g-To apply concepts of adult learning to program planning.	39	4.129	.971	
5	4.352	.944	12d-To use equipment effectively.	57	3.736	1.123	
6	4.344	.934	10c-To develop objectives which specifically identify intended outcomes.	33	4.238	.872	
7	4.294	.964	12c-To conduct group presentations.	41	4.119	1.032	
8	4.192	.859	10f-To identify appropriate presentation strategies for a task.	42	4.105	.909	
9	4.183	.907	13d-To use evaluation data for program revision.	35	4.220	.815	
10	4.159	.794	10a-To identify relevant audience characteristics.	48	3.904	.817	
11	4.159	.814	10b-To describe prerequisite skills for a task.	52	3.816	.919	
12	4.152	.959	10h-To apply theories to motivate participants.	51	3.829	1.099	
13	4.152	1.078	11d-To write for effective communication, i.e. scripting, technical writing, etc.	56	3.760	1.073	
14	4.112	1.002	14d-To consult effectively with subject matter experts.	30	4.282	.933	
15	4.087	.996	13b-To gather data to validate programs after program has been presented (summative evaluation.)	40	4.121	.925	
16	4.063	.936	11b-To make appropriate decisions regarding the use of audio or visual media.	55	3.764	1.064	
17	4.040	.991	13a-To gather data describing program effectiveness during developmental stages (formative evaluation.)	44	4.088	.907	
18	4.032	.903	8b-To establish communication among members of the training development team.	2	4.824	.403	

TABLE 8.--Continued

FOR TEAM MEMBERS				FOR SUPERVISORS/MANAGERS			
Rank	Mean	Standard Deviation	Competency	Rank	Mean	Standard Deviation	
19	3.984	.894	8a-To promote a favorable attitude toward training, education, and development among decision makers in the organization.	1	4.841	.408	
20	3.952	.902	12a-To prepare specifications for organizing the physical environment.	60	3.643	1.054	
21	3.912	.951	14h1-To function at awareness level with corporate goals and objectives.	4	4.806	.454	
22	3.905	.959	9f-To identify nature of problems, i.e. instructional, motivational, environmental.	24	4.365	.744	
23	3.889	.982	10d-To identify relevant existing resources for program development.	34	4.232	.805	
24	3.841	1.106	13f-To design instruments to measure participants' accomplishments.	50	3.847	.955	
25	3.833	1.015	10i-To specify structural and environmental requirements for a program.	49	3.883	.972	
26	3.817	1.031	11a-To prepare specifications for the production of materials.	59	3.697	1.067	
27	3.795	1.120	11e8-To produce simulations, role plays, group activities.	62	3.314	1.276	
28	3.762	1.127	13e-To design evaluation instruments to assess the effectiveness of a program.	46	4.008	.958	
29	3.744	1.077	14b-To keep abreast of current theoretical thought and research directions.	29	4.288	.771	
30	3.667	.980	9a-To assess needs for the development of programs.	22	4.368	.778	
31	3.648	1.018	9e-To analyze performance needs.	36	4.192	.830	
32	3.613	1.065	11c-To plan and monitor production schedules.	43	4.101	1.028	
33	3.587	1.060	13c-To plan a comprehensive program evaluation process.	26	4.341	.771	
34	3.585	1.078	13g-To evaluate the training development process.	17	4.500	.704	
35	3.579	1.162	9c-To interact as a consultant with clients.	28	4.296	.871	
36	3.571	.959	8d-To communicate with other sections of the organization.	5	4.706	.507	

TABLE 8.--Continued

FOR TEAM MEMBERS				FOR SUPERVISORS/MANAGERS			
Rank	Mean	Standard Deviation	Competency	Rank	Mean	Standard Deviation	
37	3.508	1.086	12b-To prepare specifications for the acquisition of appropriate hardware.	53	3.810	1.071	
38	3.476	1.101	9b-To design instruments for conducting needs assessment (questionnaires, interview schedules, etc.)	58	3.728	1.003	
39	3.472	1.168	14e-To possess subject matter expertise in content area to be developed.	63	3.185	1.157	
40	3.390	1.121	10j-To use organizational development (OD) principles and practices.	45	4.074	1.022	
41	3.389	1.073	10e-To determine whether to use an existing program, purchase an external program, or design a new program.	18	4.496	.679	
42	3.333	1.121	14h3-To function at awareness level with concepts of marketing and sales.	37	4.189	.921	
43	3.312	1.027	14a-To analyze development/training research data.	38	4.136	.874	
44	3.306	1.264	14h4-To function at awareness level with concepts of production and manufacturing.	47	3.959	1.167	
45	3.260	1.093	14h6-To function at awareness level with concepts of profit and loss.	25	4.352	.820	
46	3.183	1.054	13h-To determine the cost benefits of training programs.	10	4.611	.645	
47	3.024	1.093	9d-To establish program priorities.	11	4.608	.671	
48	2.984	1.241	11e3-To produce video tapes.	65	2.598	1.118	
49	2.976	1.201	11h-To evaluate the effectiveness of hired consultants.	9	4.616	.727	
50	2.966	1.203	14h2-To function at awareness level with types of business ownership.	54	3.793	1.138	
51	2.944	1.173	8k-To train others to function as instructional developers.	31	4.264	.774	
52	2.944	1.090	8m-To project future training needs of the organization.	12	4.592	.752	
53	2.895	1.306	11e6-To produce pamphlets and brochures.	64	2.770	1.177	

TABLE 8.--Continued

FOR TEAM MEMBERS				FOR SUPERVISORS/MANAGERS			
Rank	Mean	Standard Deviation	Competency	Rank	Mean	Standard Deviation	
54	2.895	1.103	14h5-To function at awareness level with concept of corporate budgeting.	27	4.339	.835	
55	2.889	1.045	8h-To set time and budget parameters for projects.	14	4.579	.624	
56	2.877	1.230	11e2-To produce audio tapes.	67	2.492	1.130	
57	2.877	1.224	11e4-To produce slide-tapes.	66	2.537	1.096	
58	2.774	1.209	8l-To prepare long and short term goals for the development unit.	7	4.667	.632	
59	2.734	1.148	11f-To locate outside consultants when needed.	19	4.488	.667	
60	2.627	1.218	14c-To design research studies to test existing and new instructional systems.	61	3.437	1.170	
61	2.579	1.038	8j-To arrange for the adoption of projects.	23	4.365	.744	
62	2.568	.986	8c-To mediate differences among staff.	16	4.500	.701	
63	2.533	1.287	11e1-To produce still photographs.	69	2.279	1.070	
64	2.532	1.009	8f-To coordinate activities of the development unit.	15	4.548	.615	
65	2.463	1.191	11e5-To produce multi-image visual displays.	68	2.339	1.037	
66	2.452	1.055	8g-To acquire and manage appropriate facilities and equipment for the unit.	32	4.246	.826	
67	2.435	1.170	11g-To supervise hired outside consultants.	21	4.440	.856	
68	2.114	1.256	11e7-To produce programs for computers.	70	2.190	1.011	
69	2.000	.933	8i-To administer the budget for the development unit.	8	4.619	.691	
70	1.833	.837	8e-To establish appropriate staffing patterns for the development unit.	20	4.476	.616	

TABLE 9.--COMPARATIVE RANKING OF COMPETENCIES BASED ON SUPERVISOR/
MANAGER RANKINGS

FOR SUPERVISORS/MANAGERS				FOR TEAM MEMBERS		
Rank	Mean	Standard Deviation	Competency	Rank	Mean	Standard Deviation
1	4.841	.408	8a-To promote a favorable attitude toward training, education, and development among decision makers in the organization.	19	3.984	.894
2	4.824	.403	8b-To establish communication among members of the training development team.	18	4.032	.903
3	4.823	.495	14g-To listen effectively.	1	4.840	.410
4	4.806	.454	14h1-To function at awareness level with corporate goals and objectives.	21	3.912	.951
5	4.706	.507	8d-To communicate with other sections of the organization.	36	3.571	.959
6	4.702	.570	14f-To adapt to differing situations.	2	4.736	.494
7	4.667	.632	81-To prepare long and short term goals for the development unit.	58	2.774	1.209
8	4.619	.691	8i-To administer the budget for the development unit.	69	2.000	.933
9	4.616	.727	11h-To evaluate the effectiveness of hired consultants.	49	2.976	1.201
10	4.611	.645	13h-To determine the cost benefits of training programs.	46	3.183	1.054
11	4.608	.671	9d-To establish program priorities.	47	3.024	1.093
12	4.592	.752	8m-To project future training needs of the organization.	52	2.944	1.090
13	4.584	.825	12e-To establish credibility with the group.	3	4.680	.655
14	4.579	.624	8h-To set time and budget parameters for projects.	55	2.889	1.045
15	4.548	.615	8f-To coordinate activities of the development unit.	64	2.532	1.009
16	4.500	.701	8c-To mediate differences among staff.	62	2.568	.986
17	4.500	.704	13g-To evaluate the training development process.	34	3.585	1.078
18	4.496	.679	10e-To determine whether to use an existing program, purchase an external program, or design a new program.	41	3.389	1.073

TABLE 9.--Continued

FOR SUPERVISORS/MANAGERS				FOR TEAM MEMBERS		
Rank	Mean	Standard Deviation	Competency	Rank	Mean	Standard Deviation
19	4.488	.667	11f-To locate outside consultants when needed.	59	2.734	1.148
20	4.476	.616	8e-To establish appropriate staffing patterns for the development unit.	70	1.833	.837
21	4.440	.856	11g-To supervise hired outside consultants.	67	2.435	1.170
22	4.368	.778	9a-To assess needs for the development of programs.	30	3.667	.980
23	4.365	.744	8j-To arrange for the adoption of projects.	61	2.579	1.038
24	4.365	.744	9f-To identify nature of problems, i.e. instructional, motivational, environmental.	22	3.905	.959
25	4.352	.826	14h6-To function at awareness level with the concepts of profit and loss.	45	3.260	1.093
26	4.341	.771	13c-To plan a comprehensive program evaluation process.	33	3.587	1.060
27	4.339	.835	14h5-To function at awareness level with the concept of corporate budgeting.	54	2.895	1.103
28	4.296	.871	9c-To interact as a consultant with clients.	35	3.579	1.162
29	4.288	.771	14b-To keep abreast of current theoretical thought and research directions.	29	3.744	1.077
30	4.282	.933	14d-To consult effectively with subject matter experts.	14	4.112	1.002
31	4.264	.774	8k-To train others to function as instructional developers.	51	2.944	1.173
32	4.246	.826	8g-To acquire and manage appropriate facilities and equipment for the unit.	66	2.452	1.055
33	4.238	.872	10c-To develop objectives which specifically identify intended outcomes.	6	4.344	.934
34	4.232	.805	10d-To identify relevant existing resources for program development.	23	3.889	.982
35	4.220	.815	13d-To use evaluation data for program revision.	9	4.183	.907
36	4.192	.830	9e-To analyze performance needs.	31	3.648	1.018

TABLE 9.--Continued

FOR SUPERVISORS/MANAGERS				FOR TEAM MEMBERS		
Rank	Mean	Standard Deviation	Competency	Rank	Mean	Standard Deviation
37	4.189	.921	14h3-To function at awareness level with the concepts of marketing and sales.	42	3.333	1.121
38	4.136	.874	14a-To analyze development/training research data.	43	3.312	1.027
39	4.129	.971	10g-To apply concepts of adult learning to program planning.	4	4.357	.843
40	4.121	.925	13b-To gather data to validate programs after program has been presented.	15	4.087	.996
41	4.119	1.032	12c-To conduct group presentations.	7	4.294	.964
42	4.105	.909	10f-To identify appropriate presentation strategies for a task.	8	4.192	.859
43	4.101	1.028	11c-To plan and monitor production schedules.	32	3/613	1/065
44	4.088	.907	13a-To gather data describing program effectiveness during developmental stages (formative evaluation.)	17	4.040	.991
45	4.074	1.022	10j-To use organizational development (OD) principles and practices.	40	3.390	1.121
46	4.008	.958	13e-To design evaluation instruments to assess the effectiveness of a program.	28	3.762	1.127
47	3.959	1.167	14h4-To function at awareness level with the concepts of production and manufacturing.	44	3.306	1.264
48	3.904	.817	10a-To identify relevant audience characteristics.	10	4.159	.794
49	3.883	.972	10i-To specify structural and environmental requirements for a program.	25	3.833	1.015
50	3.847	.955	13f-To design instruments to measure participants' accomplishments.	24	3.841	1.106
51	3.829	1.099	10h-To apply theories to motivate participants.	12	4.152	.959
52	3.816	.919	10b-To describe prerequisite skills for a task.	11	4.159	.814
53	3.810	1.071	12b-To prepare specifications for the acquisition of appropriate hardware.	37	3.508	1.086

TABLE 9.--Continued

FOR SUPERVISORS/MANAGERS				FOR TEAM MEMBERS		
Rank	Mean	Standard Deviation	Competency	Rank	Mean	Standard Deviation
54	3.793	1.138	14h2-To function at awareness level with types of business ownership.	50	2.966	1.203
55	3.764	1.064	11b-To make appropriate decisions regarding the use of audio or visual media.	16	4.063	.936
56	4.760	1.073	11d-To write for effective communication, i.e. scripting, technical writing, etc.	13	4.152	1.078
57	3.736	1.123	12d-To use equipment effectively.	5	4.352	.944
58	3.728	1.003	9b-To design instruments for conducting needs assessment (questionnaires, interview schedules, etc.)	38	3.476	1.104
59	3.697	1.067	11a-To prepare specifications for the production of materials.	26	3.817	1.031
60	3.643	1.054	12a-To prepare specifications for organizing the physical environment.	20	3.952	.902
61	3.437	1.170	14c-To design research studies to test existing and new instructional programs.	60	2.627	1.218
62	3.314	1.276	11e8-To produce simulations, role plays, group activities.	27	3.795	1.120
63	3.185	1.157	14e-To possess subject matter expertise in content area to be developed.	39	3.472	1.168
64	2.770	1.177	11e6-To produce pamphlets and brochures.	53	2.895	1.306
65	2.598	1.118	11e3-To produce video tapes.	48	2.984	1.241
66	2.537	1.096	11e4-To produce slide-tapes.	57	2.877	1.224
67	2.492	1.130	11e2-To produce audio tapes.	56	2.877	1.230
68	2.339	1.037	11e5-To produce multi-image visual displays.	65	2.463	1.191
69	2.279	1.070	11e1-To produce still photographs.	63	2.533	1.287
70	2.190	1.011	11e7-To produce programs for computers.	68	2.114	1.256

SELECTED BIBLIOGRAPHY

- American Society for Training and Development. "A Self-Development Process for the Training and Development Professional," Training and Development Journal, May 1979, 33(5), 6-12.
- Butler, F. Coit. "The Concept of Competence: An Operational Definition," Educational Technology, January 1978, 18(1), 7-16.
- Deden-Parker, Ann. "Instructional Design Competencies for Business and Industry Designer-Client Interactions," Educational Technology, May 1979, 19(5), 44-46.
- Deden-Parker, Ann. "Instructional Technology Skills Sought by Industry," Performance & Instruction, February 1981, 20(1), 24-25+.
- Division of Instructional Development/AECT. "Competencies for the Instructional Development Practitioner." Fall 1980. (Document sent to members for evaluation.)
- Gale, Larrie E., and Pol, Gaston. "Competence: A Definition and Conceptual Scheme," Educational Technology, June 1975, 15(6), 19-25.
- Galey, Minaruth. "Certification Means Professional Development" (includes: Competencies for Instructional Development Specialist, p.27-30), Instructional Innovator, December 1980, 25(9), 25-31.
- Hamreus, Dale G., ed. Media Guidelines: Development and Validation of Criteria for Evaluating Media Training, Vol. II. (Guidelines Manual) Washington, D.C., U.S. Department of Health, Education and Welfare, 1970.
- Ingalls, John D. "Throw Away Your Job Descriptions and Write Competency Models," Training/HRD, April 1979, 16(4), 32-34.
- McCullough, Mac. "ASTD Professional Development Update," Training and Development Journal, July 1981, 35(7), 17-18.
- McQuigg, Beverly. "The Role of Education in Industry," Phi Delta Kappan, January 1980, 61(5), 324-325.
- Nadler, Leonard. "A Model for Professional Development," Training and Development Journal, May 1980, 34(5), 14-22.
- Nadler, Leonard. Developing Human Resources. 2nd ed. Austin, Learning Concepts, 1979.
- Nash, Robert J., and Ducharme, Edward R. "Preparing New Educational Professionals for Non-public School Settings," Journal of Teacher Education, July/August 1979, 29(4), 36-41.
- Nitsos, James L. "Industry Versus Education: A Head to Head Comparison," Instructional Innovator, January 1981, 26(1), 16-18.

- Oliver, J. Dale. "Measuring Outcomes in Performance-Based Instruction," Performance & Instruction, December 1980, 19(10), 8-10.
- Olson, Elizabeth. "Curricula for HRD Practitioners," Training and Development Journal, July 1981, 35(7), 32-35.
- Pinto, Patrick R., and Walker, James W. A Study of Professional Training & Development Roles & Competencies; A Report to the Professional Development Committee, American Society for Training and Development. Washington, D.C., Towers, Perrin, Forster & Crosby, 1978.
- Report of the Invitational Conference on Academic Preparation of Practitioners in Training and Development/Human Resources Development. Washington, D.C., American Society for Training and Development, 1979.
- Ricks, Don M. "Barriers to Industry," Instructional Innovator, January 1981, 26(1), 11-13.
- Rosenberg, Marc J. "Preparing Training Specialists for Business, Industry, and Government: Opportunities for Education," Educational Technology, October 1980, 20(10), 33-37.
- Rossett, Allison, and Sharpe, David M. "Start Their Training Career Right," Instructional Innovator, January 1981, 26(1), 29-31.
- Schwaller, Anthony E. "The Need for Education/Training Programs in Industry," Phi Delta Kappan, January 1980, 61(5), 322-323.
- Spitzer, Dean R. "Education and Development of the Training Professional: Problems and Perspectives," Performance & Instruction, February 1981, 20(1), 18-21+.
- Stolovitch, Harold D. "Preparing the Industrial and Educational Instructional Developer: Is There a Difference?" Performance & Instruction, February 1981, 20(1), 29-30.
- Streit, Leslie Dean. An Analysis of Competencies Needed by Educational Technologists in Six Occupational Settings. Dissertation. Kansas State University, 1979.
- Streit, Leslie Dean. "Job Competencies for Six Settings," Instructional Innovator, January 1981, 26(1), 27-28.
- Wallington, Clinton J. "Generic Skills of an Instructional Developer," Journal of Instructional Development, Spring 1981, 4(3), 28-32.
- Wallington, Clinton J., et al. Jobs in Instructional Media. Washington, D.C., Association for Educational Communications and Technology, 1970.